PATENT COOPERATION TREAT

PCT

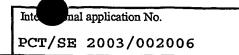
REC'D	15	APR	2005
WIPO			PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicantle on a service Clause				
Applicant's or agent's file reference 100889-1 WO	FOR FURTHER ACTION See Form PCT/IPEA/416			
International application No.	International filing date (day/m	onth/year) Priority date (day/month/year)		
PCT/SE 2003/002006	18.12.2003	20.12.2002		
International Patent Classification (IPC) o		120.22.2002		
C07D211/58, 401/06, 4	01/12, 405/06, 40	05/12, A61K 31/4468, 31/4523,		
A61P1/00, 11/00, 17/0	0, 19/00	20, 44, 1323,		
Applicant				
AstraZeneca AB et al				
This report is the international pre Authority under Article 35 and tra	eliminary examination report, esta ansmitted to the applicant accord	ablished by this International Preliminary Examining ing to Article 36.		
2. This REPORT consists of a total of		ling this cover sheet.		
This report is also accompanied by		•		
	and to the International Bureau)			
and/or sheets	sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the			
	Administrative Instructions). sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes			
beyond the di	beyond the disclosure in the international application as filed as indicated in item 4 of Box No. Land the			
Supplemental Box.				
b (sent to the Internatio		ate type and number of electronic carrier(s))		
, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).				
4. This report contains indications re-	lating to the following items:			
	the report			
Box No. II Priority				
Box No. III Non-est	ablishment of opinion with regar	ith regard to novelty, inventive step and industrial applicability		
	unity of invention			
느	•	with regard to novelty, inventive step or industrial		
applicab	pility; citations and explanations s	supporting such statement		
Box No. VI Certain	documents cited			
Box No. VII Certain	defects in the international applic	ation		
Box No. VIII Certain	observations on the international	application		
Date of submission of the demand Date of completion of this report				
Date of submission of the demand Date of completion of this report				
22.06.2004				
37-		30.03.2005 Authorized officer		
Patent- och registreringsverket	Author	izea omeer		
Box 5055 8-102 42 STOCKHOLM	Tabana wa /mm			
Facsimile No. +46 8 667 72 88	Teleph	Eva Johansson/EK Telephone No. +46 8 782 25 00		
Form PCT/IPEA/409 (cover sheet) (Januar	000 110, 140 0 702 25 00			

INTERNATIONAL PRELIVENARY REPORT ON PATENTABILITY



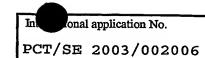
Box	No. I	Basis of the report			
1.		regard to the language, this report is based on the international application in the language under this item.	guage in which it was filed, unless		
	Ш	This report is based on a translation from the original language into the following language, which is the language of a translation furnished for the purposes of:			
		international search (under Rules 12.3 and 23.1(b))			
		publication of the international application (under Rule 12.4)			
		international preliminary examination (under Rules 55.2 and/or 55.3)			
2.	With regard to the elements of the international application, this report is based on (replacement sheets which has furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally and are not annexed to this report): The international application as originally filed/furnished				
[the description:			
ĺ			as originally filed/firmished		
		pages received by this Authority on			
		pages* received by this Authority on			
		the claims:			
[ш		as originally filed/furnished		
1			th any statement) under Article 19		
l		pages* received by this Authority on			
}		pages* received by this Authority on			
•		the drawings:			
		pages	as originally filed/furnished		
1		pages* received by this Authority on			
		pages* received by this Authority on			
		a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequ	ence Listing.		
3.		The amendments have resulted in the cancellation of:			
		the description, pages			
		the claims, Nos.			
		the drawings, sheets/figs	······································		
ĺ		the sequence listing (specify):			
		any table(s) related to the sequence listing (specify):			
4.		This report has been established as if (some of) the amendments annexed to this remade, since they have been considered to go beyond the disclosure as filed, as indica 70.2(c)).	port and listed below had not been ted in the Supplemental Box (Rule		
		the description, pages			
		the claims, Nos.			
		the drawings, sheets/figs			
		the sequence listing (specify):			
		any table(s) related to the sequence listing (specify):			
əje	If item	a 4 applies, some or all of those sheets may be marked "superseded."			

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

1			
	Internal application No.		
	PCT/SE	2003/002006	
		,	

Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability				
The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non obvious), or to be industrially applicable have not been examined in respect of:				
	the entire international application			
\boxtimes	claims Nos. 12			
becau	use:			
\boxtimes	the said international application, or the said claims relate to the following subject matter which does not	Nos. 12 ot require an international preliminary examination (specify):		
ani	See PCT Rule 67.1.(iv).: Methods for treatment of the human or animal body by surgery or therapy, as well as diagnostic methods.			
П	the description, claims or drawings (indicate partic	wlan alamanta halaw) ar gaid alaima Nac		
	are so unclear that no meaningful opinion could be	formed (specify):		
	the claims, or said claims Nos.	are so inadequately supported		
	by the description that no meaningful opinion could	be formed.		
	no international search report has been established	for said claims Nos.		
	the nucleotide and/or amino acid sequence listing does not comply with the standard provided for in Annex C of the Administrative Instructions in that:			
	the written form has no	t been furnished		
	does r	ot comply with the standard		
	the computer readable form has no	t been furnished		
	-	ot comply with the standard d sequence listing, if in computer readable form only, do not comply with x C-bis of the Administrative Instructions.		
_	See Supplemental Box for further details.			

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY



Box No. V		Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement			
1.	Statemen	t			
	Nove	lty (N)	Claims Claims	1-11	YES NO
	Inven	tive step (IS)	Claims Claims	1-11	YES NO
	Indus	trial applicability (IA)	Claims Claims	1-11	YES NO

2. Citations and explanations (Rule 70.7)

The following documents are cited in the search report:

D1 WO 0187839 A1

D2 WO 0076514 A1

D3 WO 9202502 A1

D4 EP 903349 A2

D5 WO 0192227 A1

The claimed invention relates to novel piperidine derivatives, which act as modulators of chemokine receptor activity, especially CCR5.

D1 discloses structurally close piperidine derivatives, which act as modulators of chemokine receptor activity, especially CCR5.

The novel piperidine derivatives differ from D1 only in that an unbroken carbon-chain is bound to a carbon atom in the piperidine-ring, while in the known compounds an -N-X-chain where X is e.g. a bond is bound to a carbon atom in the piperidine-ring in the same way. The remaining substitutions in the structure are the same.

D2 discloses structurally close piperidine derivatives, which act as modulators of chemokine receptor activity, especially CCR5.

The novel piperidine derivatives differ from D2 mainly in the substitution on the nitrogen-atom in the piperidine-ring. The carbon-chain, which is bound to a carbon-atom in the piperidine-ring, could be the same as X in D2, when X is -(C

.../...

Supplemental Box

In case the space in any of the preceding boxes is not sufficient. Continuation of: Box V

0-6 alkyl)-Y-(C 0-6 alkyl)- and Y is a bond.

The compounds in D1 and D2 have the same therapeutical use as the known and thus solve the same problem as the known compounds.

In the light of the prior art and having regarded the present description and claims, the problem underlying the present application is to find further compounds which act as modulators of chemokine receptor activity, especially CCR5.

The solution proposed in claims 1-11 of the present application cannot be considered as involving an inventive step (Article 33(3) PCT) for the following reasons.

It is common practice to synthesise analogues of known compounds. In the present case, D1 as well as this application, may serve as examples.

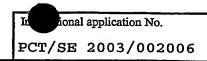
The selected novel compounds must show an unexpected and advantageous effect over the prior art. No such effect has been demonstrated for the present compounds. In the absence of relevant biological activity data to the support of the compounds, no inventive step can be acknowledged for the entire scope of the claims. The basis for recognition of inventive step of the present compounds over the closest prior art might lie in the assessment that, particularly in the realm of biologically active compounds, even small structural modifications may cause dramatic changes in activity.

However, the structural differences between the compounds of the prior art D1 and the present compounds are at least as great as the structural differences between the latter compounds and the present, structurally more remote compounds.

Thus, the claims 1-11 are novel but lack inventive step. The claims have industrial applicability.

D3-D5 disclose the general state of the art and are not considered to be particular relevant.

INTERNATIONAL PRED. MARY REPORT ON PATENTABILITY



Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

Claims 1-3, partly 4-7 and 8-11 are not supported by the description as required by Article 6 PCT, as their scope is broader than justified by the description and drawings. The reasons therefore are the following: The examples show only two kinds of structures (table I and example 1 and 2).